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AUTHOR Lyytinen, Paula
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ABSTRACT

The relationship between symbolic play and early language was studied in 40 girls and 39 boys between 12 and 24 months of age. Subjects were individually tested during two or three sessions by a female experimenter in a day care center in Jyvaskyla, Finland. Children's symbolic play level was assessed according to a developmental structure of five play levels proposed by McCune-Nicholich (1981) and based on Piaget's sequential stages. Data were based on observations of play sessions with 22 selected toys and administration of linguistic tasks. Specifically, language skills were assessed by recording spontaneous verbal behavior during play sessions and by presenting tasks of language comprehension, language production, and the mastery of morphology. Findings indicated that symbolic play levels follow a hierarchical order. Regardless of the developmental sequence, considerable variation was found at each level that play activities were attained. Results also supported temporal correspondences between symbolic play and aspects of early language; in addition, symbolic play level significantly predicted the mastery of morphology 3 months later. (Descriptions of the levels of symbolic play proposed by McCune-Nicolich are appended.) (BJD)

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SYMBOLIC PLAY AND EARLY LANGUAGE

Paula Lyytinen

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ABSTRACT

The relation of symbolic play and early language was investigated in children between 12 and 24 months of age. Children's symbolic play level was assessed with the procedure described by McCune-Nicolich and language skills with selected comprehension and production tasks. Special attention was paid to hierarchical symbolic combinations exhibited in play and to rule-based language assessed by morphological tests. It was also examined how the symbolic play level attained at age 18-21 months predicts the mastery of morphology measured three months later. The synchrony between symbolic play and early language development was examined on the basis of data from which the common age-related variance is partialled out. The relationships are described in scatter-diagrams. The results provided support for the temporal correspondences between symbolic play and the studied aspects of early language. When the children attained level 3 play, a rapid progress in language comprehension and production was observed. This concurrence occurred almost independently of the age at which decentered symbolic games emerged; the respective variation range of the age was 12 months. The children who played combinatorial symbolic games also had proceeded to the combining phase in their spontaneous speech. Internally directed symbolic games belonging to level 5 appeared only among the children who had acquired some critical features of rule-based language. At this level the children produced multiword utterances including agent-object differentiation and mastered the first inflections of their native language. Symbolic play level also predicted significantly the mastery of morphology three months later.

Paula Lyytinen, Department of Psychology, University of Jyväskylä,
40100 Jyväskylä 10, Finland

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INTRODUCTION

In recent years symbolic play has attracted both theoretically and empirically considerable attention (e.g., Fein, 1981; McCune-Nicolich, 1981, Ungerer, Zelazo, Kearsley, & O'Leary, 1981). The work of Piaget is at the origin of this interest. Piaget (1962), when examining symbolic development, suggested that general progress in play reflects the young child's emerging ability to manipulate symbols. Sensorimotor based action and perceptual knowledge of objects are the foundation for the expression of symbols in play.

McCune-Nicolich (1977, 1981) has proposed on the basis of Piaget's sequence a developmental structure of play levels. Development proceeds from initial realistic treatment of objects to pretending of children's own everyday activities. After that children apply pretend schemes to dolls and other participants, integrating then such play into sequences. Late in the second year a prior mental plan begin to guide children's pretend play behavior (see Appendix).

According to Piaget (1962), both language and symbolic play as aspects of the semiotic function reflect the development of underlying symbolic ability and the beginning of representational thinking. This theoretical argument has led investigators to examine the relation of pretend behavior to language. Recent findings concerning the relation of early language and symbolic play have suggested some temporal and structural correspondences (e.g., Corrigan, 1982; McCune-Nicolich, & Bruskin, 1982; Veneziano, 1981).

The longitudinal study conducted by Veneziano revealed close time relations between the occurrence of specific achievements in language development and non-verbal representation expressed in symbolic play. The findings of Corrigan also demonstrated that children's language development covaried with their development in pretending. The used pretend-play categories were systematically related to a language sequence that included progressively more animate and/or inanimate sentence components.

McCune-Nicolich (1981) presents an interesting hypothesis that planned play sequences at level 5 begin at the point where rule-based multiword utterances predominate in the child's speech. The structure of level 5 play is hierarchical requiring the coordination of two

representational structures, a covert mental transformation or intention which directs pretend behavior. Children indicating hierarchically structured play activities also are assumed to be capable of producing simple linguistic rules (McCune-Nicolich & Bruskin, 1982).

Studies concerning symbolic play and early language have not provided convincing evidence about the relation of these two domains. Unconsistent findings appear to result from methodological and definitional differences between the studies. The results seem to depend in part on how play is assessed (spontaneous or elicited play), what kind of play objects are used and what component of language is in question (Bates et al., 1979; Fein, 1981; Jackowitz & Watson, 1980; Ungerer et al., 1981). Studies on the relation between play and language have stressed language production. Explaining language comprehension might have more theoretical significance (Fein, 1981).

The purpose of this paper is to describe the development trend of symbolic play and language in 12-24-month-old children and to seek correspondence in these domains. Language comprehension and production are analysed separately in order to specify their separate developmental synchrony with symbolic play behavior. Further, the purpose is to test the hypothesis that children express rule-based forms simultaneously in language and play. It is also examined how the symbolic play level attained at age 18-21 months predicts language performance three months later.

METHOD

Subjects

Subjects were 79 children (40 girls and 39 boys), 12-24 months of age. All children were from Day Care Centers in the city of Jyväskylä. The ages of the subjects are presented in Table 1.

TABLE 1.

The subjects of the research

Age/months	N
12-13	9
14-15	7
16-17	9
18	14
19-20	14
21-22	11
23-24	15

Data collection

The research includes data material from two studies^{x)}. Data collection consisted of observation of play sessions and administration of linguistic tasks. The subjects were individually tested by a female experimenter in a playroom of Day Care Center. The experimenter met every child three times each session lasting about a ½-hour. If the child wanted his or her caretaker was present to insure that the child was at ease during the session. The caretaker was seated on a standard place of the playroom. She was asked not to initiate nor to direct any activities of the child.

Assessment of symbolic play

In 12-17 -month-old children two separate play sessions were observed. Each session lasted 8 min per child. The child was presented with two selected sets of 15 toys. The order of presentation of the sets was counterbalanced across sessions. The older children (18-24 months) participated in one play session lasting 10 min per child.

^{x)} One data material has been collected by the author and the other by students Pollari, K., Ruotsalainen, A-M., Salminen, P., & Vahala, O. whose material the author has reclassified and analysed for this article.

The toy set consisted of 22 selected toys. The toy set items of both age groups included realistic representations of common objects like cups, saucers, spoons, dolls, doll furniture, cloths for doll's bed (a pillow, a blanket), baby bottles, cars, trucks, a garage, animals (a dog, a cat, a duck), and without clear appropriate use red and blue blocks. The toys were arranged in a pretermined order on a little table of a playroom. The experimenter and the child were seated at the table next to each other. At the beginning of the play session the experimenter told the child 'I have here some toys for you. You can play with these toys'. The experimenter recorded the child's play activities and speech produced during the session without participating in the manipulation of the play material.

The child's play acts were assessed by using the procedure described by McCune-Nicolich (1981). The designation of the child's symbolic level was based on the play acts representing the highest achieved level during the session. The child was considered to demonstrate a particular level of play, if he independently produced two or more play acts which could be classified into that level.

Assessment of language

Language skills of the children were assessed by recording their spontaneous verbal behavior during the play sessions and by presenting linguistic tasks concerning language comprehension, production and the mastery of morphology. The presentation order of the linguistic tasks was counterbalanced across sessions. In the comprehension task the child had to show from the three alternative pictures the one in which the matter in question appeared. For instance, 'Show me from these pictures which is a hat'. Language production was assessed by a naming task. The task included items in which the child had to name and describe the object drawn on the picture cards. The spontaneous speech produced during the play session was classified according to prevailing level of linguistic utterances (vocalization and/or single words, combinations without syntax, evidence of syntax).

The language skills of the 18-24 -month-old children were measured with morphological tests in order to explain to what extent the children understand and use the rule-based forms of Finnish morphology. Finnish

is an interesting language in this respect because it has a very complicated morphological rule system. Gradation in the stem, several cases, and verb inflection in various persons are typical characteristics of the Finnish language. The morphological test items were presented by means of picture cards which had been constructed by applying Berko's (1958) method.

The inflections investigated are presented in Table 2. The criteria for choosing the forms were that they should represent different rules of Finnish morphology and that their degree of difficulty should be appropriate to the age group investigated.

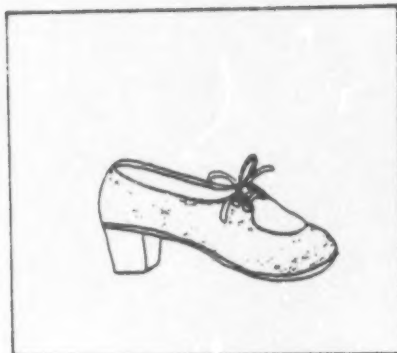
TABLE 2.

The forms of the morphological tests

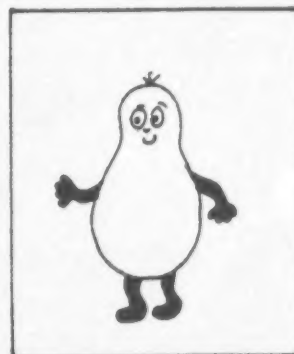
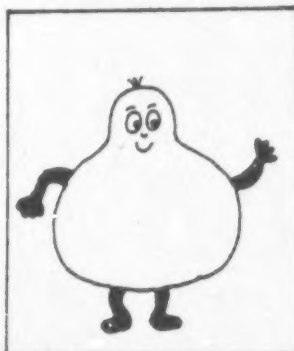
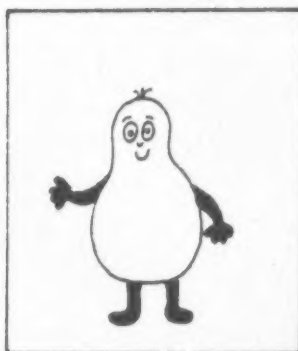
The morphological forms	Allomorphs	Comprehension measured	Production measured
Inflection of adjectives	Comparative -mpi	x	
Inflection of nouns	Inessive -ssa, -ssä	x	x
	Illative -vowel lengthened + n or -n ^{x)} or sg -seen and pl -siin	x	x
	Partitive -a, -ä, -ta, -tä		x
Inflection of verbs	Passive indicative perfect -tu, -ty, -tuu, -tty	x	x
	Active indicative present -no special ending		x

^{x)} Vowel between h-n is the same as the vowel preceeding h

In the production test the tasks were presented with picture cards. Two pictures had been drawn on each card. After the child had picked a card from a mixed pack, the experimenter read to the child a sentence which briefly stated the object or the event presented in the first picture. Examples of production and comprehension items used in the morphological tests are given in Figure 1.



This is a shoe. There are _____ in that picture.



This one is so fat. Show me which one of these is even fatter.

FIGURE 1. Examples of morphological test items

All the child's response were recorded. The child was judged to have mastered or not to have mastered the form on the basis of the utterance he produced as a response to the cards. In the comprehension test three pictures had been drawn on each card. The experimenter told what happened in the first picture and asked then the child to choose from the two alternative pictures the one in which the matter expressed by a specific inflectional form appeared.

RESULTS

The reliabilities of the language tests were estimated among the 12-17, 18-20 and 21-24 -month-old children separately by the split-half method. The coefficients were shown to be very acceptable; they varied between 0.66-0.98. The reliability of the symbolic play classification was estimated by comparing the assessments of two raters in a sample (10 %) of the subjects. The percentage of agreement among the raters was 86.

Appearance of symbolic play levels

The percentages of subjects playing at the different levels are presented in Table 3. The ages of the children played at the first and second levels varied from 12 to 19 months; the mean age was fourteen at level 1 and sixteen months at level 2. Decentered symbolic games at level 3 are, according to Piaget (1962), the first true symbols because representation of the pretend scheme is no longer fused with the child's own action. Almost half of the subjects played at level 3. The variation in age was largest at this level. The youngest children were 12 months and the oldest 24 months; the mean age was 18 months.

Playing at levels 4 and 5 seemed to form its own developmental phase, these games appeared only among 17 month-olds or older. The age of the children producing combinatorial symbolic games belonging to level 5 occurred among 17-24 -month-olds and the mean age was 22 months.

TABLE 3.

Appearance of symbolic play levels in 12-24-month-olds

Levels of symbolic play according to McCune-Nicolich (1981) ^{x)}	Age ranges (mean underlined)	Number of subjects	Percentage of subjects
Level 1: Presymbolic schemes	12- <u>14</u> -18	5	6.3
Level 2: Autosymbolic schemes	12- <u>16</u> -19	9	11.4
Level 3: Decentered symbolic games	12- <u>18</u> -24	38	48.1
Level 4: Combinatorial symbolic games	17- <u>20</u> -24	17	21.5
Level 5: Internally directed symbolic games	17- <u>22</u> -24	10	12.7

^{x)} detailed description in Appendix.

Relationship of symbolic play and early language

Chi-square technique was used to test the correspondence of particular play levels and studied aspects of language skills. The play score was based on the highest play activities of every child and it was compared each language variables separately. Chi-square analyses were computed for 12-17 months and 18-24 months separately.

TABLE 4.
Correspondence between symbolic play level and language skills in 12-
17 -month-olds

Language skills	Play levels			χ^2 (df=4)
	1 and 2	3	4	
Language comprehension				
Test scores				
0-2	9	6	0	12.77*
3-8	0	4	1	
9-10	0	3	2	
Naming task				
Test scores				
0-5	9	7	0	11.22*
6-14	0	3	2	
15-20	0	3	1	
Structure of spontaneous speech				
Levels				
1	9	4	0	14.10**
2	1	3	0	
3	0	5	3	

* $p < .05$, ** $p < .01$

As seen in Table 4, the children who performed well in linguistic tests engaged in more representational play than others. The findings of the older age group are presented in Table 5. Morphological test variables included the sum scores of all measured inflections.

TABLE 5.

Correspondence between symbolic play level and language skills in 18-24 -month-olds

Language skills	Below 4	Play levels 4	5	χ^2 (df=4)
Language comprehension task				
Test scores				
0-2	2	0	0	
3-8	13	2	0	12.66*
9-10	14	13	10	
Naming task				
Test scores				
0-5	7	0	0	
6-14	8	1	0	13.77**
15-20	15	14	9	
Structure of spontaneous speech				
Levels				
1	14	2	0	
2	12	7	0	32.34***
3	2	6	11	
Morphology comprehension test				
Test scores				
0-6	16	3	0	
7-12	12	8	1	26.33***
13-17	4	2	8	
Morphology production test				
Test scores				
0-2	19	3	0	
3-10	11	4	0	31.49***
11-18	2	6	9	

* $p < .05$ ** $p < .01$ *** $p < .001$

All χ^2 values were significant. The highest correspondences were found between symbolic play and the morphological tests ($p < .001$). Age effect was removed statistically from the results because considerable variation was found at the age when the play levels were attained. Pearson's partial correlations in a total sample also demonstrated positive relationships between symbolic play and language measures. The highest correlations were found between symbolic play and production-type language tasks ($p < .001$).

TABLE 6.

Partial correlations between symbolic play and early language

Language skills	Symbolic play
Language comprehension task	.33**
Naming task	.45***
Structure of spontaneous speech	.55***
Morphology comprehension test	.40**
Morphology production test	.58***

** $p < .01$

*** $p < .001$

Children's language performances produced in different tasks were examined according to the levels of symbolic play.

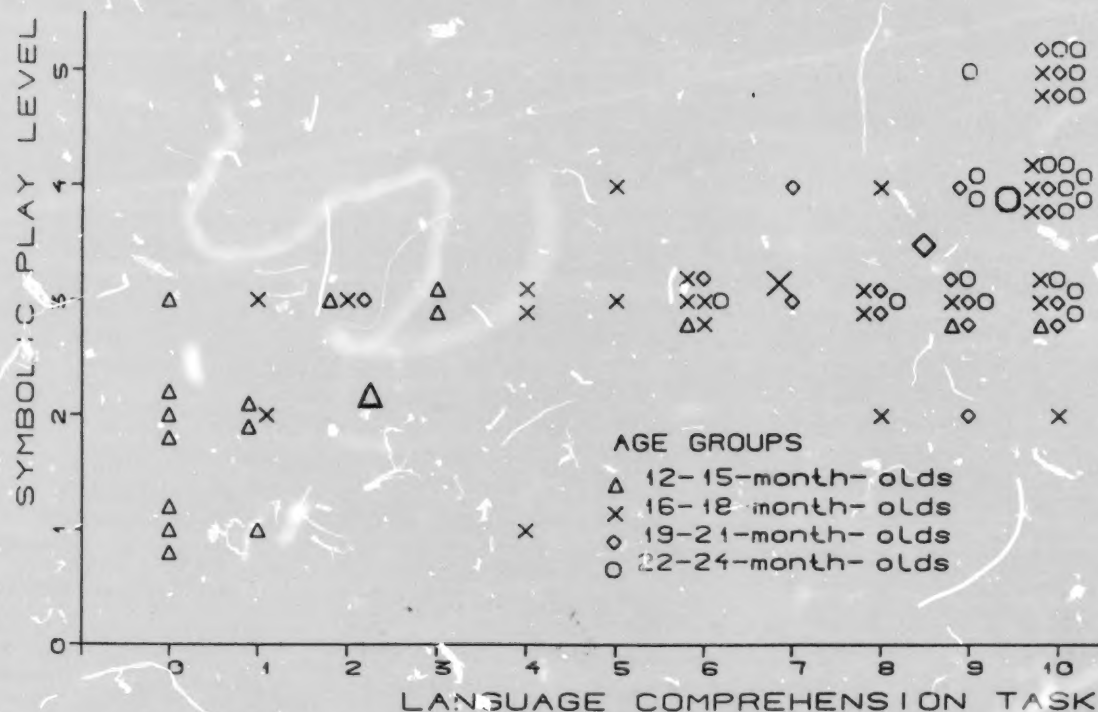


FIGURE 2. MASTERY OF LANGUAGE COMPREHENSION TASK AT DIFFERENT SYMBOLIC PLAY LEVELS. GROUP MEANS WITH LARGER MARKS.

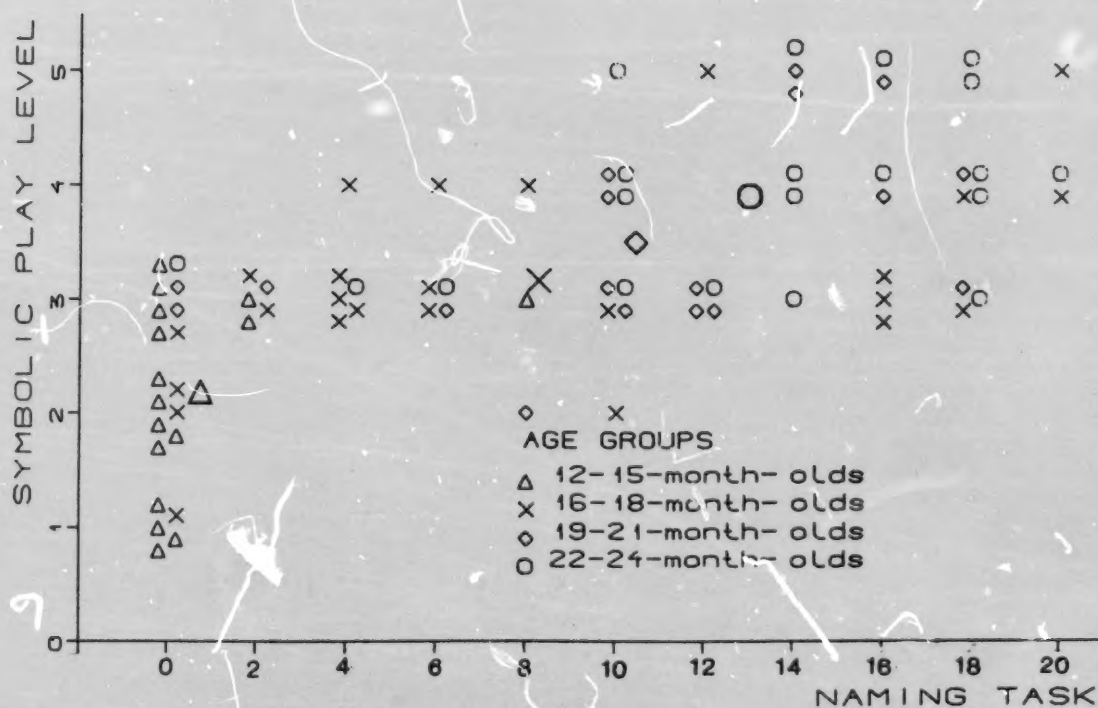


FIGURE 3. MASTERY OF NAMING TASK AT DIFFERENT SYMBOLIC PLAY LEVELS. GROUP MEANS WITH LARGER MARKS.

As seen Figure 2, the right answers in the language comprehension task were accidental at level 1 (9.1 % correct responses). Transition from level 1 to 2 meant an increase in comprehension. Some children began to recognize the linguistic symbols of familiar objects.

Figure 3 shows that the naming task was too difficult for the children playing at levels 1 and 2. Spontaneous speech of these children mainly included vocalization with few single words.

The children playing at level 3 were able to extend pretend schemes to another person or object. Clear developmental changes appeared also in language skills. The scores of the language comprehension task were two times higher (61.7 %) and those of the naming task three times higher (34.1 %) than among children playing at level 2. The children's spontaneous speech included single words and two-word combinations without syntax.

At level 4 the children had achieved a good mastery of the comprehension task (84.0 %) and the production task (69.4 %). The spontaneous speech utterances produced during the play sessions were two-word combinations. Typical play acts at level 4 were combinatorial symbolic games. The findings agreed with the suggestions that a general combinatorial capacity emerges parallelly in language and in play. At level 5 most of the children achieved maximum scores in the comprehension and naming tasks. The spontaneous speech included multi-word expressions with agent-object differentiation. The children also mastered some Finnish inflectional forms.

Symbolic play and mastery of morphology

In earlier studies conducted by the author (Lyytinen, 1978, 1982) it was found out that children begin to use first inflections of their native language at about the age of 2. One of the purposes of this study was to explain the relationship of symbolic play and the mastery of inflections by presenting the morphological tests to 18-24-month-old children. Morphology refers to the level of linguistic structures at which the child has to combine stems and inflections to form words.

In Figures 4 and 5 the mastery of comprehension and production of morphological forms at different play levels is described.

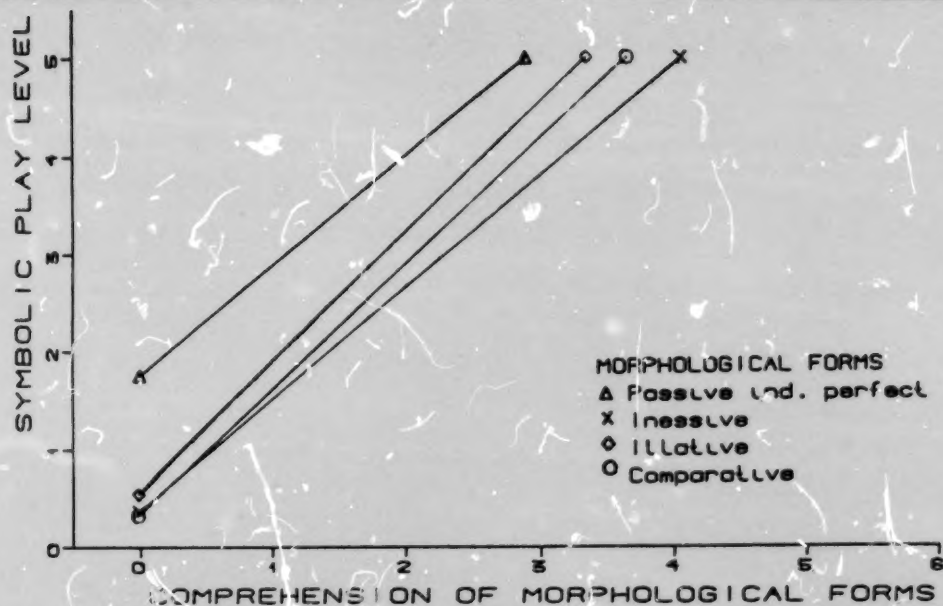


FIGURE 4. COMPREHENSION OF MORPHOLOGICAL FORMS AT DIFFERENT SYMBOLIC PLAY LEVELS GRAPHED WITH REGRESSION LINE FOR EACH FORM SEPARATELY

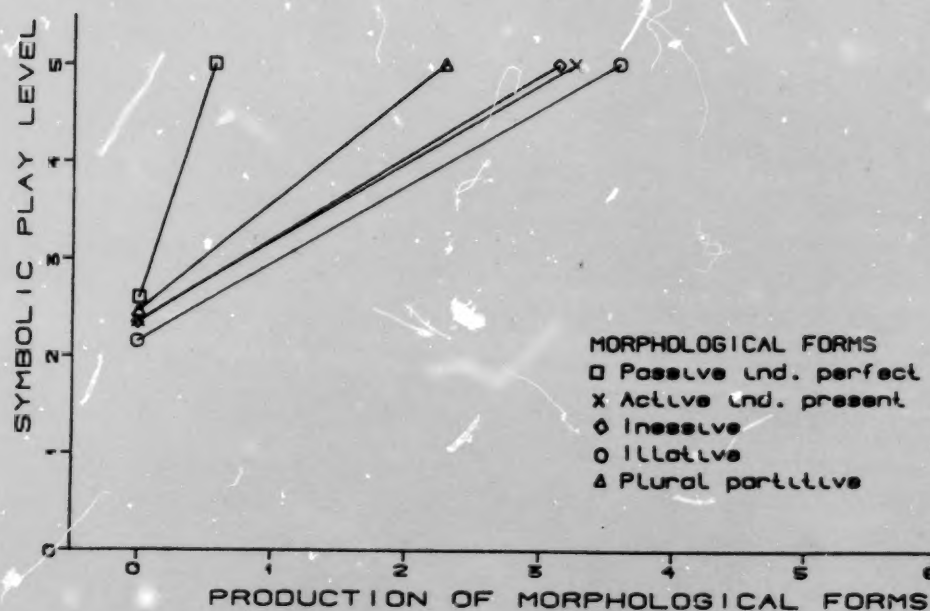


FIGURE 5. PRODUCTION OF MORPHOLOGICAL FORMS AT DIFFERENT SYMBOLIC PLAY LEVELS GRAPHED WITH REGRESSION LINE FOR EACH FORM SEPARATELY.

Performances improved in all inflections as a function of play level. The best scores were achieved by children playing at level 5. It was also found out that comprehension of inflections appeared already at level 2, while their production occurred to a small extent only at level 3. According to earlier findings (Lyytinen, 1978) Finnish 2-year-old children produced few comparative forms (3.4 %). The present study revealed that this age group, however, comprehended the comparatives very well (level 5; 72.5 %). Corresponding difference was found in the comprehension (67.5 %) and in the production (18.7 %) of the passive perfect form at level 5.

Age effects on the mastery of morphology at the different symbolic play levels were partialled out by using covariance analysis. Age as a covariate, the analysis revealed that symbolic play explained significantly the comprehension of morphological forms ($F(4,5) = 4.71, p < .01$), accounting for 19 % of the variance. The respective percentage explanation of age was 10. The explanation was stronger in the production test ($F(4,45) = 17.98, p < .001$) in which play level explained 36 % and age 25 % of the variance. Both symbolic play level and age correlated with the mastery of morphology. The common variance of the symbolic play was, however, in both analyses stronger than that of age.

Prediction value of symbolic play

The morphological tests were re-presented to 18-21-month-old children three months later. The level of symbolic play attained in the first measurement significantly predicted the mastery of morphology assessed later. Age as a covariate, symbolic play level explained 32 % and age 22 % of the variance of the comprehension of morphology ($F(4,19) = 5.53, p < .01$). In the production test the respective percentages were 47 ($F(4,19) = 8.95, p < .001$) and 18.

DISCUSSION

The findings of the present study supported the contention that symbolic play levels follow a hierarchical order. Considerable variation, irrespective of the invariant developmental sequence, was found at each

level at the age when play activities were attained. This was true especially at level 3 where the respective range of age was 12 months. The results also lent support to the temporal correspondences between symbolic play and the studied aspects of early language. Play level attained in the first measurement predicted significantly the mastery of morphology assessed at the same time and three months later. Both symbolic play level and age correlated with the mastery of morphological forms; in both measurements play level explained, however, more of the variance than age.

The comprehension of language activated before the production. Comprehension covariated more strongly with emerging symbolic schemes. Significant growth especially in language comprehension and also in production was found to follow the emergence of symbolic activities evident in level 3 play.

The findings agree with the earlier suggestions (e.g., Corrigan, 1982; Fenson & Ramsay, 1981; McCune-Nicolich, & Bruskin, 1982) that combinations in play and language appear at about the same point in development. The children who played combinatorial symbolic games had proceeded to the combining phase in their spontaneous speech. These children also comprehended inflectional forms but produced them to a lesser extent. Production of inflections increased markedly only at symbolic play level 5. The readiness to play internally directed symbolic games and to produce simple morphological rules seemed to emerge simultaneously.

The correspondences described above may depend on similar task demands in the studied symbolic domains (e.g., Fischer, 1980). The temporal relationships may also reflect common changes in underlying structure which influence language and play skills. McCune-Nicolich and Bruskin (1982) present that concomitant improvement in analogous language and play skills means that others than linguistic structures should account for the developments in both domains. Fenson and Ramsay (1981) suppose that an underlying ability to combine symbols is required for production of combinations in both play and language. Besides this skill, the production of rule-based inflections and that of planned play sequences presupposed the child's ability to generate symbols mentally and, to some extent, planning of behavior before performance. Such preplanning seems to be one important factor in the development of symbolic functioning in general (e.g., Fenson & Ramsay, 1980; McCune-Nicolich, 1981). Operationalization of preplanning is an issue requiring further investigation.

Piaget (1962, 1979) has viewed symbolic play, deferred imitation, and early verbal expression as separate but related aspects of the semiotic function arising at the end of the sensorimotor period. Although the present findings revealed concurrent appearance between the mean scores of the two symbolic domains, large individual variation was found at the age when children attained specific play activities and linguistic skills. There also were children whose language development and symbolic play did not proceed parallelly. For instance, at level 4 three children failed to show expected production skills as assessed by the morphological tests. On the other hand two children at level 3 mastered morphological forms as well as did most children not before the level 4. In order to understand these 'non-synchronic' cases we have to obtain more information about different aspects of the semiotic function and to detail the critical cognitive processes on which symbolic domains are based.

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Appendix

Levels of symbolic play according to McCune-Nicolich (1981)

Level 1: Presymbolic schemes

The child shows understanding of object use or meaning by brief recognitory gestures. Properties of present object are the stimulus of action. Play doesn't include pretending.

Level 2: Autosymbolic schemes

At the previous level the child attached sensorimotor meanings to objects and shows now this awareness by pretending. Such actions as eating, sleeping, and grooming occur at this level and they are played only with respect to the child's own body.

Level 3: Decentered symbolic games

The child extends symbolism beyond his own actions by including other actors or receivers of action, such as doll or mother and by pretending at activities of other people or objects. The child remains limited to one symbolic scheme played at a time.

Level 4: Combinatorial symbolic games

Two forms of combinations occur: games where a single scheme is applied to several participants and multi-scheme symbolic games where two successive actions are played in sequence.

Level 5: Internally directed symbolic games

The structure of play is hierarchical, requiring the coordination of at least two representational structures, as covert mental transformation or intention which directs pretend behavior. The child uses symbolic correspondences generated mentally (e.g., stick = horse) to direct pretend behaviors (e.g., feed 'horse') or plans a pretend behavior mentally before executing it.